1   <u>**CLAIMS**</u>

2   Having thus described our invention, what we claim as new and desire to secure by Letters Patent

3   is as follows:

4   1. A method comprising a requester discovering at least one service in a local domain, including

5   the steps of:

6   obtaining an address of a proxy serving as a Service Discovery Proxy for said local domain;

7   establishing a connection to said Service Discovery Proxy; and

8   employing said Service Discovery Proxy in discovering dynamic availability of said at least one

9   service in said local domain.

10   2. A method as recited in claim 1, further comprising employing one service from said at least

11   one service.

12   3. A method as recited in claim 1, wherein the step of obtaining includes:

13   contacting a central registry having addresses for a plurality of Service Discovery Proxies; and

14   selecting the address of a particular Service Discovery Proxy serving the local domain.

15   4. A method as recited in claim 1, wherein the step of establishing includes employing said

16   address in accordance with a transmission protocol.

1   5. A method as recited in claim 4, wherein the transmission protocol is TCP/IP.

2   6. A method as recited in claim 1, wherein the step of employing includes querying said Service

3   Discovery Proxy for a list of services currently active in said local domain.

4   7. A method as recited in claim 1, wherein said requester provides a list of services for which

5   status is queried to said Service Discovery Proxy .

6   8. A method as recited in claim 7, further comprising dynamically updating the list of services

7   currently active in said local domain without registering any of said services with a central

8   registry.

9   9. A method as recited in claim 1, wherein the step of employing includes:

10   said Service Discovery Proxy receiving a request from said requester for service discovery;

11   said Service Discovery Proxy invoking a service discovery protocol in said local domain;

12   customizing responses from services in said local domain; and

13   said Service Discovery Proxy sending customized responses to said requester;

14   10. A method as recited in claim 9, wherein the step of customizing includes at least one

15   function taken from a group of functions including: formatting; filtering; aggregating;

16   encapsulating; segmenting; selecting, and a requester defined function.

17   11. A method as recited in claim 9, wherein the service discovery protocol includes Service

18   Location Protocol.

1   12. A method as recited in claim 1, wherein the step of employing includes receiving

2   information enabling said requester to utilize said at least one service.

3   13. A method comprising forming a Service Discovery Proxy including the steps of:

4   assigning an available proxy to represent a local domain;

5   establishing a connection between said available proxy and a network; and

6   registering said available proxy as the Service Discovery Proxy representing the local domain.

7   14. A method as recited in claim 13, wherein the step of registering is performed employing a

8   central registry;

9   15. A Service Discovery Proxy comprising:

10   a network communication module having an assigned communication address,

11   a service detector module to detect dynamically available services in a local domain represented

12   by said proxy;

13   a processing module to process at least one incoming query from a requester regarding

14   availability of at least one service; and

15   a responding module to form outgoing responses to said at least one incoming query allowing

16   discovery of any of said dynamically available services by said requester.

17   16. A proxy as recited in claim 15, wherein said communication address exists in a central

18   registry to allow said proxy to be accessed from a plurality of requesters.

1   17. A proxy as recited in claim 15, wherein said network communication module further:

2   establishes a listening port for incoming queries; and

3   communicates with a plurality of requesters with a transmission protocol.

4   18. A proxy as recited in claim 15, wherein said network communication module obtains an
5   assigned network communication address from a network address assigning entity; and

6   registers said assigned network communication address with a central registry as a Service
7   Discovery Proxy;

8   19. A proxy as recited in claim 15, wherein said service detector module supports at least one
9   communications functionality from a group of functionalities including:

10   at least one physical communication media;

11   at least one link protocol;

12   at least one network protocol;

13   at least one transmission protocol;

14   at least one service discovery protocol;

15   receiving service queries from said processing module;

16   determining an appropriate communication protocol to be used;

1   performing service discovery in accordance with a selected service discovery protocol; and

2   any combination of these.

3   20. A proxy as recited in claim 15, wherein said service detector module determines an

4   appropriate communication protocol to use.

5   21. A proxy as recited in claim 15, wherein said processing module performs a function taken

6   from a group of functions including:

7   querying the availability of at least one service;

8   querying all available services;

9   querying the employment of said service;

10   interpreting said query and invoking service detector module; and

11   any combination of these.

12   22. A proxy as recited in claim 15, wherein said responding module transmits said query

13   response to the requester.

14   23. A proxy as recited in claim 15, wherein said responding module aggregates a plurality of

15   query responses before transmitting a particular response to the requester.

16   24. An article of manufacture comprising a computer usable medium having computer readable

17   program code means embodied therein for causing requester discovery of a service, the computer

1 readable program code means in said article of manufacture comprising computer readable

2 program code means for causing a computer to effect the steps of claim 1.

3 25. A program storage device readable by machine, tangibly embodying a program of

4 instructions executable by the machine to perform method steps for requester service discovery,

5 said method steps comprising the steps of claim 1.

6 27. A computer program product comprising a computer usable medium having computer

7 readable program code means embodied therein for causing functions of a Service Discovery

8 Proxy, the computer readable program code means in said computer program product comprising

9 computer readable program code means for causing a computer to effect the functions of claim

10 15.